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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/704,102	11/01/00	COURTNEY S	ETK/226

THOMAS W. HUMPHREY  
WOOD, HERRON & EVANS, L.L.P.  
2700 CAREW TOWER  
441 VINE STREET  
CINCINNATI OH 45202

MM91/0926

EXAMINER
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SAINT SURIN, J

ART UNIT	PAPER NUMBER
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2856

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DATE MAILED: 09/26/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

# Office Action Summary

Application No.

09/704,102

Applicant(s)

COURTNEY ET AL.

Examiner

Jacques M Saint-Surin

Art Unit

2856

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 05/04/01, 02/02/01 and 11/01/00.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5.

- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

**DETAILED ACTION**

**Claim Rejections - 35 USC § 102**

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

2. Claims 1, 10, 12-13, 22 and 24 are rejected under 35 U.S.C. 102(e) as being anticipated by Piety et al (US Patent 6,078,874).

Regarding claims 1 and 13, Piety et al. ('874) discloses:

a data collector (machine data collection 10, see: Fig. 1), comprising:

a housing (hand-held sensor unit 30 includes a housing, see: Figs 1-2, col. 2, line 41;

a vibration signal input on said housing (sensory contact between the sensor unit 40 and machine 12 may be established by placing the sensor unit 40 in physical contact with a desired measurement point as shown in Fig. 1 in order to sense a machine 12 operating characteristic such as vibration 12, see: col. 4, lines 55-60);

an analog to digital converter (A/D converter 110, see: Fig. 3, col. 6, line 1) within said housing (hand-held sensor unit 40) connected to said vibration signal input, converting a vibration signal received at said vibration signal input to a digitized vibration signal,

an optical system (bar code reader 45, see: Fig. 3) within said housing (40), said optical system (45) receiving light from outside said housing (40);

a receiver circuit (base instrument HPC 32 , see: Fig. 3, col. 6, lines 54-55) converting said received light to a digital signal, and

a digital signal processing circuit (microprocessor 70, see: Fig. 3), connected to said analog to digital converter (A/D converter 110) and said receiver circuit (, and receiving, storing or processing said digitized vibration signal and/or said digital signal converted from said received light, for the purpose of predictive maintenance.

Regarding claims 10 and 22, Piety ('874) discloses a storage device (base instrument 32 which is a microprocessor including memory (volatile and non-volatile), see: col. 5, lines 14-15.

Regarding claims 12 and 24, Piety ('874) discloses hand held sensor unit 40 includes a housing dimensioned and configured for being hand-held by the operator, see: col. 2, lines 41-42.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 2-11, 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Piety et al. (US Patent 6,078,874) in view of Van Voorhis (US Patent 5,059,901).

Regarding claims 2-3, and 14-15, Piety et al. ('874) discloses sensor unit 40 having both a vibration sensor and a tachometer which meets the limitations of optical system. However, Piety et al. ('874) does not specifically suggest a light source emitting light through an aperture in said housing for reflection and return to said optical system. Van Voorhis ('901) discloses a laser light source (laser diode 11, see: col. 4, line 6). As per claims 3 and 15, Van Voorhis further discloses a laser light source (laser tachometer 10, see: col. 5, line 66). It would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute the tachometer of Piety et al. for that of Van Voorhis because it would be obvious to provide a tachometer as a laser light source for the purpose of generating a light through an aperture of the data collector for measuring the rotational speed of a selected rotating body without making

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physical contact with that body in an efficient manner, thereby making the above combination very effective and reliable.

Regarding claims 4-5 and 16-17, Piety et al. ('874) in view of Van Voorhis discloses a laser diode 11 and a collimating lens 15, (see: col. 4, lines 12-13 of Van Voorhis). As per claim 5, Piety in view of Voorhis discloses a light detector (photodiode 23) and a beam splitter 19, see: col. 4, lines 7 and 1.

Regarding claims 6-7 and 18-19, Piety in view of Van Voorhis discloses a PIN photodiode 23 for converting received light to an electrical signal, see: col. 4, lines 7-8. As per claim 7, Van Voorhis discloses signal conditioning circuit 35 of device 10 that comprises a threshold comparator, see: col. 3, lines 64-66.

Regarding claims 8 and 20, Piety ('874) in view of Van Voorhis ('901) discloses a laser light tachometer for measuring the rotational speed of a selected rotating body, (see: abstract of Van Voorhis).

Regarding claims 9 and 21, Piety ('874) in view of Van Voorhis ('901) discloses a dichroic filter 28, see: col. 4, line 14 of Van Voorhis).

Regarding claims 11 and 23, Piety ('874) in view of Van Voorhis ('901) discloses microcomputer 60 that includes display 122, input keys 126, see: Fig. 1 of Piety.

### ***Conclusion***

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Mizutani et al. (US Patent 5,231,284) discloses a method and apparatus using laser light for detecting the rotational position of a servomotor and the like.


Busch (US Patent 5,612,544) discloses a measuring device with an integrated light scanning means which scans both rotations of a rotating body and coded data associated with the rotating body.

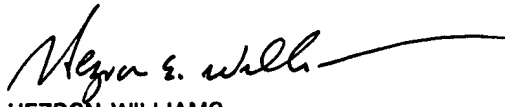
Robinson et al. (US Patent 5,895,857) discloses a machine fault detection using vibration signal peak detector.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jacques M Saint-Surin whose telephone number is (703) 308-3698. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on (703) 305-4705. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308 0956.

  
Jacques M. Saint-Surin  
September 24, 2001

  
HEZRON WILLIAMS  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800